SECTION 281600

INTRUSION DETECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Provide combination intrusion detection control panels, including engineering, components, installation and commissioning.

1.2 RELATED SECTIONS

A. Section 080600: Openings

B. Section 081000: Doors and Frames

C. Section 260500: Common Work Results for Electrical, for interface and coordination with building electrical systems and distribution.

1.3 REFERENCES

A. Reference Standards: Provide systems which meet or exceed the requirements of the following publications and organizations as applicable to the Work of this Section:

1. Underwriters Laboratories Inc. (UL):

a. UL 365: Police Station Connected Burglar Alarm Units and Systems.

b. UL 609: Local Burglar Alarm Units and Systems.

c. UL 611: Central Station Burglar-Alarm Units.

d. UL 636: Holdup Alarm Units and Systems.

e. UL 684: Local, Central Station, and Remote Station.

f. UL 1023: Household Burglar-Alarm System Units.

g. UL 1076: Proprietary Burglar-Alarm Units and Systems.

h. UL 1610: Central-Station Burglar-Alarm Units.

2. Federal Communications Commission (FCC):

a. Code of Federal Regulations Title 47: Part 15: Radio Frequency Devices.

b. Code of Federal Regulations Title 47: Part 68: Connection of Terminal Equipment to the Telephone Network.

1.4 SYSTEM DESCRIPTION

A. Intrusion Detection Control Panels: Basis-of-design is the Honeywell VISTA 128BPT System, a burglary/access control/CCTV switching system that includes the following capabilities:

1. Listed for UL Commercial Burglary.

2. Supports up to 128 zones.

3. Supports up to 8 separate partitions.

4. Supports up to 150 users.

5. Supports commercial wireless devices.

6. Provides integrated security, access control, and CCTV switching capability.

7. Provides supervision of peripheral devices.

8. Supports up to 96 optional relay outputs.

9. Supports long-range radio (LRR) communication.
10. Provides scheduling capability to allow for automated operations.
11. Supports alarm reporting via Internet.
12. Interfaces with automation software.
13. Monitors smoke detector maintenance signals
14. Capable of being installed using existing wiring

1.5 SUBMITTALS

A. Manufacturer's Product Data: Submit manufacturer's data sheets indicating systems and components proposed for use, including instruction manuals.

B. Shop Drawings: Submit complete shop drawings including connection diagrams for interfacing equipment, list of connected equipment, and locations for major equipment components.

C. Record Drawings: During construction maintain record drawings indicating location of equipment and wiring. Submit an electronic version of record drawings not later than Substantial Completion of the project.

D. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, customized to the system installed. Include system and operator manuals.

E. Field Tests: Submit results of field testing of every device including date, testing personnel, retesting date if applicable, and confirmation that every device passed field testing.

F. Maintenance Service Agreement: Submit a sample copy of the manufacturer's maintenance service agreement, including cost and services for a one year period for

Owner's review. Maintenance shall include, but not be limited to, labor and materials to repair the system, provide test and adjustments, and regular inspections.

1.6 QUALITY ASSURANCE

A. Manufacturer: Minimum ten years experience in manufacturing and maintaining similar systems. Alarm manufacturer shall be certified compliant with ISO 9001.

B. Installer: Minimum two years experience installing similar systems, and acceptable to the manufacturer.

C. Environmental Conditions: System shall be designed to function in the following environmental conditions:

1. Storage Temperature: Designed for a storage temperature of -10° C to 70°C.
2. Operating Temperature: System shall be designed for an operating temperature of 0° C to 50°C (32° F to 120°F).
3. Humidity: System shall be designed for normal operation in an 85% relative humidity environment.
4. Electromagnetic Interference: System shall meet or exceed the requirements of FCC Part 15, Class B devices, FCC Part 68, IEC EMC directive.

D. Power Requirements: Components shall have the following electrical specifications. The system shall operate using standard 120 VAC, 50 Hz/60 Hz power.

1. Control Primary Power: Transformer power shall be 16.5 VAC, 40 VA.
2. Backup Battery: Rechargeable 12 VDC, gel type, lead acid backup battery shall be provided. The battery shall be rated between 12 and 34-ampere hours (AH).
3. Alarm Power: 12 VDC, 1.7 amps for each bell output
4. Auxiliary Standby Power: 12 VDC, 0.75 amp maximum.

5. Total Power: Combined auxiliary standby and alarm currents shall be 2.3 amps.

6. Fusing: The battery input, auxiliary, and bell outputs shall be protected using PTC circuit breakers. All outputs shall be power limited.

E. Control Panel Enclosure: A metal cabinet, suitable for wall mounting. Dimensions shall not exceed 14.5 inches (36.8 cm) in height, 12.5 inches (31.8 cm) in width or 3 inches (7.6 cm) in depth.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's labeled packages. Store and handle in accordance with manufacturer's requirements, in a facility with environmental conditions within recommended limits.

1.8 WARRANTY

A. Manufacturer's Warranty: Submit manufacturer's standard one-year warranty for the system.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Intrusion Detection Alarm Panel Manufacturer: VISTA 128BPT by Honeywell, www.security.honeywell.com.

2.2 SYSTEM PERFORMANCE

A. Control Panel: The control panel shall be an 8-partition, UL commercial and burglary control panel that supports up to 128 zones using basic hardwired, polling loop, and wireless zones, RF receivers, and relay modules. The control shall provide the ability to schedule time-driven events, and allow certain operations to be automated by pressing a single button. The system shall be capable of interfacing with an ECP long range radio (LRR) unit that can send Contact ID messages. The control shall provide integrated access control and CCTV-switching capability with the use of a single downloader and database.

1. Intrusion Detection System components shall be connected using the following Honeywell Genesis Series Cables:

a. Keypads use four conductor, 22AWG or 18AWG, non-shielded cable:

1) 22AWG

(a) General Purpose applications use Part #: 1104

(b) Riser applications use Part #: 2104

(c) Plenum applications use Part #: 3104

2) 18AWG

(a) General Purpose applications use Part #: 1119

(b) Riser applications use Part #: 2115

(c) Plenum applications use Part #: 3115

b. VPLEX Zone Expanders shall connect to a VPLEX data bus using two conductor, 18AWG, non-shielded cable

1) General Purpose applications use Part #: 1118

2) Riser applications use Part #: 2114

3) Plenum applications use Part #: 3114

4) Direct burial applications use Part #: 4156

c. VPLEX Fire detection devices and two wire fire detection devices connect using two conductor, 18AWG, non-shielded fire alarm cable

1) General Purpose applications use Part #: 4106

2) Riser applications use Part #: 4306

3) Plenum applications use Part #: 4506

4) Direct burial applications use Part #: 4156

d. Four wire fire detection devices connect using four conductor, 18AWG, non-shielded fire alarm cable

1) General Purpose applications use Part #: 4107

2) Riser applications use Part #: 4307

3) Plenum applications use Part #: 4507

4) Direct burial applications use Part #: 4157

e. Unpowered detection devices connect to zone inputs using two conductor, 22AWG, non-shielded cable

1) General Purpose applications use Part #: 1102

2) Riser applications use Part #: 2102

3) Plenum applications use Part #: 3102

f. Powered detection devices connect to zone inputs using four conductor, 18AWG, non-shielded cable

1) General Purpose applications use Part #: 1119

2) Riser applications use Part #: 2115

3) Plenum applications use Part #: 3115

4) Direct burial applications use Part #: 4157

g. The Bell output shall use two conductor, 16AWG, non-shielded cable

1) General Purpose applications use Part #: 1125

2) Riser applications use Part #: 2121

3) Plenum applications use Part #: 3121

h. Power connections for control panels shall be made using two conductor, 16AWG, non-shielded cable.

1) General Purpose applications use Part #: 1125

2) Riser applications use Part #: 2121

3) Plenum applications use Part #: 3121

i. Ground connections to control panels shall be made using 14AWG solid insulated copper ground wire.

1) General Purpose applications use Part #: 1131

2. Basic Hardwired Zones: Control shall provide 8 style-B hardwire zones with the following characteristics:

a. EOLR supervision (optional for zones 2-8) shall support N.O. or N.C. sensors (EOLR supervision required for UL installations).

b. Zones/Points shall be individually assignable to any partition.

c. Supports up to 16 two-wire smoke detectors on zone 1.

d. Supports four-wire smoke or heat detectors on any zone (power to four-wire smoke detectors must be supervised with an EOL device).

3. Optional Expansion Zones:

a. Polling Loop Expansion: Control shall support up to 120 additional hardwire zones using a built-in two-wire polling (multiplex) loop interface. The polling loop shall provide power and data to remote point modules, and constantly monitor the status of all zones on the loop. Maximum current draw shall not exceed 128 mA. The polling loop zones shall have the following characteristics:

1) Interface with RPM (Remote Point Module) devices that provide Class B, Style Y (e.g., 4208U/4208SN) or a combination of Class B, Style Y, and Class A, Style Z (e.g., 4208SNF) zones.

2) Individually assignable to one of 8 partitions.

3) Supervised by the control panel.

4) A 12,000 ft (3658 m) wire run capability without using shielded cable.

5) Each RPM (Remote Point Module) enclosure shall be tamper protected.

b. Wireless Expansion Zone: Control shall support up to 128 wireless zones using a 5800 series RF receiver (fewer if using hardwire and/or polling loop zones). Wireless zones shall have the following characteristics:

1) Supervised by control panel for check-in signals (except certain non-supervised transmitters).

2) Tamper-protection for supervised zones.

3) Individually assignable to one of 8 partitions.

4) Individually assignable to bell outputs and/or auxiliary relays.

5) Support wireless devices listed for Commercial Burglary using the 5881ENHC RF Receiver.

4. Partitions: Control shall provide the ability to operate e8 separate areas, each functioning as if it had its own control. Partitioning features shall include:

a. A Common Lobby partition (1-8), which can be programmed to perform the following functions:

1) Arm automatically when the last partition that shares the common lobby is armed.

2) Disarm when the first partition that shares the common lobby is disarmed.

b. A Master partition (9), used strictly to assign keypads for the purpose of viewing the status of all 8 partitions at the same time (master keypads).

c. Assignable by zone.

d. Assignable by keypad/annunciator.

e. Assignable by relay to one or all 8 partitions.

f. Ability to display burglary and panic and/or trouble conditions at all other partitions' keypads (selectable option).

g. Certain system options selectable by partition, such as entry/exit delay and subscriber account number.

5. User Codes: Control shall accommodate 150 user codes, all of which can operate any or all partitions. Certain characteristics must be assigned to each user code, as follows:

    a. Authority level (Master, Manager, or several other Operator levels). Each User Code (other than the installer code) shall be capable of being assigned the same or a different level of authority for each partition that it will operate.

    b. Opening/Closing central station reporting option.

    c. Specific partitions that the code can operate.

    d. Global arming capability (ability to arm all partitions the code has access to in one command).

    e. Use of an RF (button) to arm and disarm the system (RF key must first be enrolled into the system).

6. Peripheral Devices: Control shall support up to 30 addressable ECP devices, which can be any combination of keypads, RF receivers, relay modules, and interactive phone module. Peripheral devices have the following characteristics:

    a. Each device set to an individual address according to the device's instructions.

    b. Each device enabled in system programming.

    c. Each device’s address shall be supervisable (via a programming option).

7. Keypad/Annunciator: Control shall accommodate up to 16 keypads or six (6) touch-screen (i.e.; advanced user interface) keypads. The keypads shall be capable of the following

    a. Performing all system arming functions.

    b. Being assigned to any partition.

    c. Providing four programmable single-button function keys, which can be used for:

        1) Panic Functions: activated by wired and wireless keypads; reported separately by partition.

        2) Keypad Macros: 32 keypad macro commands per system (each macro is a series of keypad commands). Assignable to the A, B, C, and D keys by partition.

8. Optional Output Relays: A total of 96 relay outputs shall be accommodated using relay modules. Each relay module shall provide four (4) Form C (normally open and normally closed) relays for general-purpose use. The relays shall be capable of being:

    a. Programmed to activate in response to system events.

    b. Programmed to activate using time intervals.

    c. Activated manually.

    d. Assigned an alpha descriptor.

    e. A combination of 4204 (ECP) and 4101SN (polling loop) relays.

9. Optional Vista Interactive Phone Module: The control shall support the ADEMCO 4285/4286 VIP Modules, which permit access to the security system in order to perform the following functions:

    a. Obtain system status information.

    b. Arm and disarm the security system.

    c. Control relays.

    d. Battery saving feature.

10. Integrated Access Control: Control shall be capable of the following:

    a. Providing a command that activates relays to allow access doors to open (e.g., lobby door), lights to be turned on or off, etc.

    b. Becoming a fully integrated access control system by using numerous VistaKey Single-Door Access Control Modules.

    c. Supporting up to 15 VistaKey Access Control Modules. The VistaKey Access Control Modules shall use the same Compass Downloader as the Vista-128BPT and shall be programmable from the Compass Downloader or the Keypad/Annunciators.

    d. Assigning any number of access control relays to each partition (up to 96 for the system).

    e. Supporting up to 500 access card holders using VistaKey.

11. CCTV Switching: System shall be capable of supporting the VistaView 100 CCTV Switching System. The CCTV system shall be fully integrated and be event driven by

Burglary or Access events. When cameras are not event driven, they shall be driven by an automatic preset dwell time. The system shall also be capable of:

a. Activating the CCTV system via a Form-C relay output.

b. Operating up to 60 camera inputs and 30 video outputs.

12. Commercial Wireless Equipment: Control shall be compatible with UL Listed Commercial Wireless Security equipment including:

a. ADEMCO 5881ENHC Commercial Wireless Receiver: The receiver shall be capable of receiving as many points as the control panel is rated for. Up to two (2) Receivers may be used on any system. Receivers may be remotely located anywhere on the system Keypad/Annunciator bus.

b. Honeywell 5808W3 Wireless Photoelectric Smoke and Heat Detector: The device shall be UL 268 listed and shall have Maintenance Alert capability and Automatic Drift Compensation.

c. ADEMCO 5809 Wireless 135D Fixed Temperature and Rate of Rise Heat Detector: The device shall be UL 521 listed for commercial applications.

d. ADEMCO 5817CB Wireless Universal Contact Monitoring Transmitter: This device shall be capable of making any conventional UL listed contact device a wireless device. The device shall be UL listed for commercial burglary applications as follows: UL 365, 609, 1023, 1076 and 1610 for security and nurse call.

e. ADEMCO 5869 Wireless Hold Up Switch/Transmitter: This device shall be UL 636 listed for commercial burglary applications.

13. Optional Keyswitch: Control shall support the ADEMCO 4146 Keyswitch on any one of the system's 8 partitions. If used, zone 7 is no longer available as a protection zone.

14. Voltage Triggers: System shall provide voltage triggers, which change state for different conditions. Used with devices such as a remote keypad sounder or keyswitch ARMED and READY LEDs.

15. Event Log: System shall maintain a log of different event types (enabled in programming). The event log shall provide the following characteristics:

a. Stories up to 512 events.

b. Viewable at the keypad or through the use of Compass software.

c. Printable on a serial printer, including zone alpha descriptors.

16. Scheduling: Provides the following scheduling capabilities:

    a. Open/close schedules (for control of arming/disarming and reporting).

    b. Holiday schedules (allows different time windows for open/close schedules).

    c. Timed events (for activation of relays, auto-bypassing and un-bypassing, auto-arming and disarming, etc.).

    d. Access schedules (for limiting system access to users by time).

    e. End User Output Programming Mode (provides 20 timers for relay control).

    f. The system shall automatically adjust for daylight savings time.

17. Communication Features: Supports the following formats and features for the primary and secondary central station receivers:

    a. Formats: ADEMCO Express; ADEMCO Contact ID 4 and 10 Digit Acct number.

    b. Backup reporting: The system shall support backup reporting via the following: Secondary phone number; ECP long-range radio (LRR) interface; option to select long range radio (LRR) or dialup as the primary reporting method (dynamic signaling feature).

    c. Internet reporting: The system shall be capable of communicating with the central station via the internet using Alarmnet-i. It shall provide the user with the ability to control the system via a browser interface (i.e., AOL, Netscape, Internet Explorer). All packet data transmitted to the monitoring station shall be encrypted with a minimum of 1024 bits of encryption.

18. Audio Alarm Verification Option: Provides a programmable Audio Alarm Verification (AAV) option that can be used in conjunction with an output relay to permit voice dialog between an operator at the central station and a person at the premises.

19. Cross-Zoning Capability: Helps prevent false alarms by preventing a zone from going into alarm unless its cross-zone is also faulted within 5 minutes.

    a. Alarm notification appliances, including but not limited to sirens horns, bells and strobes.

    b. Auxiliary devices capable of operating using full-wave rectified unfiltered voltage.

20. Exit Error False Alarm Prevention Feature: System shall be capable of differentiating between an actual alarm and an alarm caused by leaving an entry/exit door open. If not subsequently disarmed, the control panel shall:

    a. Bypass the faulted E/E zone(s) and/or interior zones and arm the system.

    b. Generate an Exit Error report by user and by zone so the central station knows **it was an exit alarm and who caused it.**

21. Built-in User's Manual and Descriptor Review: For end-user convenience, the control panel shall contain a built-in User's Manual. It shall include the following capabilities:

    a. By depressing any of the function keys on the keypad for five (5) seconds, a brief explanation of that function shall scroll across the alphanumeric display.

    b. By depressing the READY key for five (5) seconds, all programmed zone descriptors shall be displayed (one at a time). This feature shall provide a check for installers and ensure all descriptors have been entered properly.

22. Programming: Control shall be capable of being programmed locally or remotely using the ADEMCO Compass Downloader and shall be capable of:

    a. Uploading and downloading all programming information at 300 baud.

    b. Uploading and displaying firmware revision levels from the control.

23. Automation Software: The Control shall be capable of interfacing with automation software via an RS232 input on a single partition.

2.3 COMPONENTS

A. System Integration: System shall integrate with facility doors, windows, and departments. The system shall also integrate with external systems, such as building appliances and building alert systems for remote control and central collection of external system alerts. When integrated with external systems, the system shall connect to the external system to receive status changes by way of a dry contact output from the external system. The system shall use its user interface to provide local status messages from external systems, providing for the initiation of local building policies. Optionally, the system may transmit information to an off-site monitoring service to provide initiation of remote policies when appropriate. The installer shall follow manufacture's instructions when installing and programming system equipment.

1. V-Plex Bus Extensions: Extended system V-Plex bus branch circuits shall be scaleable to increase the total size of the bus in larger installations. Branch circuits leading from different buildings or from different floors in multi-story buildings shall be isolated from one another so that a shorted or grounded branch circuit is isolated away from other near-side branch circuits, allowing other V-Plex devices to be isolated so that they can continue to operate.

2. Zone Input: System zone inputs allow the system to sense the change in state of an output from an external device, such as a door/window position sensor, a motion detector, a relay output from an appliance, the output of an external alert system, or other devices that provide a dry closure output.

3. Wireless Receivers for Commercial Applications: Include Commercial Wireless Receivers where designated. The wireless receiver shall be UL Listed, Factory Mutual Approved, MEA Listed, and CSFM Listed for the application. The wireless receiver shall receive messages from wireless devices indicating device detection loop open, normal, shorted, tamper alarm, and low battery status when sent from transmitters associated with the system. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The transmitter's associated control panel shall report any missing transmitter within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the receiver is Honeywell 5881ENHC or equivalent.

4. Wireless Repeaters for Commercial Applications: Include Commercial Wireless Repeaters where designated. The wireless repeater shall be UL Listed for the application. The wireless repeater shall receive and forward messages from wireless devices indicating device detection loop open, normal, shorted, tamper alarm, and low battery status when sent from transmitters associated with the system. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The transmitter's associated control panel shall report any missing transmitter within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the repeater is Honeywell 58xxRPT or equivalent.

5. Combined AlarmNet-I (Internet) and AlarmNet-GSM (Global System for Mobile) Fire Alarm Communication: The facility system shall be monitored using both the

AlarmNet-I and the AlarmNet-G Communication services. The system shall use Honeywell's AlarmNet IGSMCF Fire Alarm transmitter or equivalent. The communication service shall employ a two-way Internet connection through AlarmNet Communication Service as the primary method of communication, and then the two-way GPRS (General Packet Radio Service) as the secondary means of communication and shall use SMS (Short Message Service) as a tertiary means of communication. The equipment shall be UL listed for use in this application. The installer shall follow manufacturer's instructions when installing the AlarmNet unit.

6. VSI Bus Isolation and Integrity: System V-Plex bus branch circuits shall be isolated from one another so that a shorted, overloaded, or grounded branch circuit is isolated away from other near-side branch circuits, allowing undamaged V-Plex bus circuits to continue to operate. VSI Isolation modules shall be installed at near-side connections to cable runs leading to additional buildings, at cable runs leading to additional floors in multi-story buildings, and at junction boxes leading to multiple V-Plex branch circuits within the system. The installer shall use the Honeywell VSI module or equivalent.

7. Zone Input: System zone inputs allow the system to sense the change in state of an output from an external device, such as a door/window position sensor, a motion detector, a relay output from an appliance, the output of an external alert system, or other devices that provide a dry closure output.

8. Leak, Flood, Water Level: Monitor the level of water in a designated location. The installer shall install a Honeywell Model 470-12 Water Sensor or equivalent. The owner may monitor air conditioning duct drip pans, areas beneath water heaters and tanks, refrigeration drain basins, sump pumps, basements, or restrooms. The installer shall follow manufacturer instructions while installing and programming system equipment.

9. Hollow Steel Frame Doors: Monitor the opened and closed position of doors in the facility. The installer shall install a Honeywell Model 4191SN-WH Recessed 1/2" sensor, equipped with the steel door adapter or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

10. Filled Steel Frame Doors: Monitor the opened and closed position of doors in the facility. The installer shall install a Honeywell Model 960 Door sensor, and a 4193SN or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

11. Wood Frame Doors: Monitor the opened and closed position of doors in the facility. The installer shall install a Honeywell Model 4191SN-WH Recessed ½" sensor or

equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

12. Roof Hatches: Monitor the opened and closed position of hatches and access doors to the roof of the facility. The installer shall install a Honeywell Model 960 Armored Door Sensor, and a 4193SN or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

13. Overhead Doors: Monitor the opened and closed position of overhead bay doors in the facility. The installer shall install a Honeywell Model 4959SN Overhead Door sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

14. Temperature Threshold Detector: Selected areas in the facility will use Temperature Threshold detectors to sense high or low level temperatures within a designated area. Locations for Temperature Threshold detectors may be in kitchens, laboratories, server rooms, classrooms or other areas where temperature threshold notification is critical. For each Temperature Threshold detector, install a Honeywell zone input module and a Honeywell TS300 Temperature Threshold detector or equivalent, and an appropriate power supply.

15. Carbon Monoxide Detector, V-Plex: Selected areas in the facility will use carbon monoxide detectors to sense high levels of carbon monoxide. Locations for carbon monoxide detectors may be in parking garages, kitchens, laboratories, near fireplaces, or in natural gas fueled heater closets. For each carbon monoxide detector, install a Honeywell 4193SN zone input module and a System Sensor CO1224 Carbon Monoxide detector or equivalent, and an appropriate power supply.

16. Natural Gas Detector: Selected areas in the facility will use natural gas detectors to sense high levels of natural gas. Locations for natural gas detectors may be in kitchens, laboratories, near fireplaces, or in natural gas fueled heater closets. For each natural gas detector, install a Honeywell zone input module and a Pama DW-200012UL natural gas detector or equivalent, and an appropriate power supply.

17. Glass Break Detector, V-Plex: Selected areas in the protected site will use glass-break detectors to sense the breaking of windows. Where designated in the plans, install a Honeywell Model FG1625SN Glass Break detector or equivalent. The installer shall follow manufacturer's instructions when installing, testing and programming system equipment.

18. Dual-Tec Motion Detector, Wall-Mounted, V-Plex: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of rooms. Where

designated in the plans, install a Honeywell Model DT7500SN V-Plex Dual-Tec Motion Detector or equivalent.

19. Passive Infrared Motion Detector, Ceiling-mounted, V-Plex: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of rooms. Where designated in the plans, install a Honeywell Model IS280CM Ceiling Mounted Passive Infrared Motion Detector or equivalent.

20. Panic Buttons: Include manual panic buttons under desks, in storage rooms, in walk-in refrigeration units and other designated locations. The panic button shall be the Honeywell Model 269SN or equivalent.

21. Keypad, Alpha Display: The system keypad shall include a two-line, alphanumeric LCD display. Use the Honeywell Vista 6160 keypad or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

22. Keypad: Color Graphic Touch Screen Display: The system keypad shall employ a dynamic, interactive graphic touch screen display. Use the Honeywell Vista 6280 keypad or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

23. Automatic Door Locking: Selected doors in the facility will use system automatic door locking capabilities to restrict entry to into the facility, yet allow free exit by those who have completed their business. For each automatic locking door, install a 4101SN relay output module, a power supply, and an electric locking device.

24. Automatic Door Holders: Selected doors in the facility will use system automatic door holder capabilities to hold doors open until particular system events release the door. For each automatic locking door, install a 4101SN relay output module, a power supply, and an electric magnetic door holder device.

25. Energy Management: The system shall be connected to the central EMS system for the purposes of affecting the operation of heat and air conditioning appliances when the partition is armed.

26. Energy Management: The system shall be connected to each HVAC thermostat for the purposes of disabling heat and air conditioning appliances when the partition is armed.

27. Refrigeration Temperature Threshold Detector: Selected refrigeration units in the facility will use Temperature Threshold detectors to sense high temperature levels. Locations for Temperature Threshold detectors may be in kitchens, laboratories, For each Temperature Threshold detector, install a Honeywell 4193SN zone input

module and a Honeywell TS300 Temperature Threshold detector or equivalent, and an appropriate power supply.

28. Optiflex Video Camera System: Include an integrated video system. Use the Honeywell Optiflex Network Video or equivalent. The Video system shall be capable of being displayed on suitable system keypads. The Video system shall be capable of being viewed from a distant network location by way of a browser, or by video software. The Video system shall provide up to six camera inputs and an NTSC video output. The Video system shall be capable of storing up to 19, 10-frame event clips that can be retrieved by way of software. The system shall not require the use of a DVR. The installer shall follow manufacturer's installation instructions when installing system equipment.

29. Wireless Door Sensors for Wood Jambs: Include Wireless Door Sensors for Wood Jamb Doors where designated. When the door is opened and closed, the wireless door sensor shall send messages indicating the state of the door to the control panel. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The door sensor's associated control panel shall report any missing door sensor within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. Each door sensor shall include an internal tamper switch, and shall send a tamper alert to the control panel when removed from its installed location. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the wireless door sensor is the 5818MN or equivalent.

30. Wireless Door Sensors for Hollow Metal Door Frames: Include Wireless Door Sensors for Hollow Metal Jamb Doors where designated. The when the door is opened and closed, the wireless door sensor shall send messages indicating the state of the door to the control panel. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The door sensor's associated control panel shall report any missing door sensor within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. Each door sensor shall include an internal tamper switch, and shall send a tamper alert to the control panel when removed from its installed location. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the door sensor is the 947-75 and the 5816 Wireless transmitter or equivalent.

31. Wireless Door Sensors for Hollow Metal Door Frames: Include Wireless Door Sensors for Hollow Metal Jamb Doors where designated. The when the door is opened and closed, the wireless door sensor shall send messages indicating the state of the door to the control panel. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The door sensor's associated control panel shall report any missing door sensor within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. Each door sensor shall include an internal tamper switch, and shall send a tamper alert to the control panel when removed from its installed location. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the door sensor is the 947-75 and the 5816 Wireless transmitter or equivalent.

32. Wireless Door Sensors for Roof Hatches: Include Wireless Door Sensors for Roof Hatches where designated. The when the door is opened and closed, the wireless door sensor shall send messages indicating the state of the door to the control panel. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The door sensor's associated control panel shall report any missing door sensor within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. Each wireless transmitter shall include an internal tamper switch, a back tamper switch, and shall send a tamper alert to the control panel when removed from its installed location, or when opened. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the door sensor is the Ademco 960 and the 5816 Wireless transmitter or equivalent.

33. Wireless Door Sensors for Overhead Rollup Doors: Include Wireless Door Sensors for Overhead Rollup Doors where designated. The when the door is opened and closed, the wireless door sensor shall send messages indicating the state of the door to the control panel. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The door sensor's associated control panel shall report any missing door sensor within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. Each wireless transmitter shall include an internal tamper switch, a back tamper switch, and shall send a tamper alert to the control panel when removed from its installed location, or when opened. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the

central monitoring station. The model number of the door sensor is the Ademco 957 and the 5816 Wireless transmitter or equivalent.

34. Dual-Tec Motion Detector, Wall-mounted, Wireless: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of rooms. Where designated in the plans, install a Honeywell Model 5898 Wireless Motion Detector or equivalent.

35. Glass Break Detector, Wireless: Selected areas in the protected site will use glass-break detectors to sense the breaking of windows. Where designated in the plans, install a Honeywell Model 5853 Glass Break detector or equivalent. The installer shall follow manufacturer's instructions when installing, testing and programming system equipment.

36. Wireless Panic Button: Include Wireless Panic Button at designated locations. The when the Panic Button is triggered into alarm, the wireless transmitter shall send a message to the control panel. Each wireless Panic Button shall send periodic check-in signals to its associated control panel. The Panic Button's associated control panel shall report any missing Panic Button within four and one-half hours. Each Panic Button shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. The Panic Button's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The wireless Panic Button shall include a cover tamper switch and a rear tamper switch so that it shall send a tamper alarm in the event that the Panic Button's cover is removed, or if the Panic Button is removed from its mounting surface. The model number of the wireless Panic Button is the 5853 or equivalent.

37. Vibration Sensors: Include Vibration Sensors where designated. When the sensor detects vibration, the sensor shall send messages indicating the fault to the control panel. Each vibration sensor shall report a trouble condition if disconnected from its zone expander. The model number of the vibration sensor is the Ademco 11 and a or equivalent.

38. Wireless Receivers for Commercial Applications: Include Commercial Wireless Receivers where designated. The wireless receiver shall be UL Listed, Factory Mutual Approved, MEA Listed, and CSFM Listed for the application. The wireless receiver shall receive messages from wireless devices indicating device detection loop open, normal, shorted, tamper alarm, and low battery status when sent from transmitters associated with the system. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The transmitter's associated control panel shall report any missing transmitter within four and one-half hours. Each transmitter

shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the receiver is Honeywell 5881ENHC or equivalent.

39. Wireless Repeaters for Commercial Applications: Include Commercial Wireless Repeaters where designated. The wireless repeater shall be UL Listed for the application. The wireless repeater shall receive and forward messages from wireless devices indicating device detection loop open, normal, shorted, tamper alarm, and low battery status when sent from transmitters associated with the system. Each wireless transmitter shall send periodic check-in signals to its associated control panel. The transmitter's associated control panel shall report any missing transmitter within four and one-half hours. Each transmitter shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. The transmitter's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The model number of the repeater is Honeywell 58xxRPT or equivalent.

40. Wood Doors and Windows, Exposed, V-Plex: Monitor the opened and closed position of doors and windows in the facility. The installer shall install a Honeywell Model 4939SN Exposed Addressable Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

41. Wood Frame Doors and Windows, Exposed, Wireless: Monitor the opened and closed position of doors in the facility. The installer shall install a Honeywell Model 7939WG Exposed Door Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

42. Hatch Doors, Exposed, V-Plex: Monitor the opened and closed position of doors in the facility. The installer shall install a Honeywell Model 4939SN Exposed Addressable Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

43. Hatch Doors, Exposed, Wireless: Monitor the opened and closed position of hatches in the facility. The installer shall install a Honeywell Model 7939WG Exposed Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

44. Energy Management and Remote Control by Telephone: The system shall be connected to each HVAC thermostat for the purposes of disabling heat and air conditioning appliances when the partition is armed. Using the 4500 Thermostat

Interface and the 4286 Phone module, the system shall allow users to call the protected site and make adjustments to the temperature of the building.

45. Filled Metal Doors and Windows, Exposed, V-Plex: Monitor the opened and closed position of doors and windows in the facility. The installer shall install a Honeywell Model 4939SN Exposed Addressable Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

46. Filled Metal Frame Doors and Windows, Wireless: Monitor the opened and closed position of doors and windows in the facility. The installer shall install a Honeywell Model 7939WG Exposed sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

47. Hollow Metal Doors and Windows, Exposed, V-Plex: Monitor the opened and closed position of doors and windows in the facility. The installer shall install a Honeywell Model 4939SN Exposed Addressable Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

48. Server Room Alert Systems : The system shall be provide sensing of critical conditions within the server room. The system shall alert the user when the temperature is too high, when the humidity is too high, when air conditioning condensation drip pans require draining and when there is an extended power failure.

49. Kitchen Alert Systems : The system shall be provide sensing of critical conditions within the kitchen or food processing facility. The system shall alert the user when the temperature is too high, when the humidity is too high, when air conditioning condensation drip pans require draining and when there is an extended power failure.

50. Natural Gas Detector: Selected areas in the facility will use natural gas detectors to sense high levels of natural gas. Locations for natural gas detectors may be in kitchens, laboratories, near fireplaces, or in natural gas fueled heater closets. For each natural gas detector, install a Honeywell zone input module and a Pama DW-200012UL natural gas detector or equivalent, and an appropriate power supply.

51. Safe or Vault Protection: Monitor the status of the Safe. For each Safe, the installer shall provide complete protection integrated with the system including seismic detectors such as the Honeywell SC100 or equivalent where designated.

52. Vending Machine Protection: Monitor the status of the Vending Machine. For each Vending Machine, the installer shall provide complete protection integrated with the system.

53. Gas Water Heater Alert Systems : The system shall be provide sensing of critical conditions within the water heater room. The system shall alert the user in the event of natural gas leaks, carbon monoxide presence, and in the event of water leaks.

54. Photo Beam, 100 Feet, V-Plex: Monitor the status of photo beam units installed in the facility. The installer shall install a Honeywell Model CK-IB100D Photo Beam Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

55. Photo Beam, 250 Feet, V-Plex: Monitor the status of photo beam units installed in the facility. The installer shall install a Honeywell Model CK-IB250S Photo Beam Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

56. Hollow Metal Frame Doors and Windows, Exposed, Wireless: Monitor the opened and closed position of doors and windows in the facility. The installer shall install a Honeywell Model 7939WG Exposed Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

57. Hollow Metal Frame Doors and Windows, Exposed, Armored, V-Plex: Monitor the opened and closed position of doors and windows in the facility. The installer shall install a Honeywell Model 960 Armored Door Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

58. Wood Frame Doors and Windows, Exposed, Armored, V-Plex: Monitor the opened and closed position of doors and windows in the facility. The installer shall install a Honeywell Model 960 Armored Door Sensor, or equivalent. The installer shall follow manufacturer instructions while installing and programming system equipment.

59. Passive Infrared Motion Detector, Wall-Mounted, Wireless: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of rooms. Where designated in the plans, install a Honeywell Model 5890 Wireless Motion Detector or equivalent.

60. Passive Infrared Motion Detector, Ceiling-Mounted, V-Plex: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of rooms. Where designated in the plans, install a Honeywell Model 997 Passive Infrared Motion Detector or equivalent.

61. Passive Infrared Motion Detector, Wall-Mounted, V-Plex: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of

rooms. Where designated in the plans, install a Honeywell Model S2500SN V-Plex PIR Motion Detector or equivalent.

62. Dual-Tec Motion Detector, Wall-Mounted, Curtain, Wireless: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of rooms. Where designated in the plans, install a Honeywell Model 5898 Wireless Motion Detector or equivalent.

63. Dual-Tec Motion Detector, Anti-Mask, Wall-Mounted, V-Plex: Selected areas in the protected site will use motion detectors to sense motion in rooms or areas of rooms. Where designated in the plans, install a Honeywell Model DT-906 Dual-Tec Motion Detector or equivalent with anti-mask detection capabilities.

64. Glass Break Detector, Flush Mount, V-Plex: Selected areas in the protected site will use glass-break detectors to sense the breaking of windows. Where designated in the plans, install a Honeywell Model FG1625F Flush-mount Glass Break detector or equivalent. The installer shall follow manufacturer's instructions when installing, testing and programming system equipment.

65. Glass Break Detector, V-Plex, Flush-Mounted, Concealed: Selected areas in the protected site will use concealed glass-break detectors to sense the breaking of windows. Where designated in the plans, install a Honeywell Model FG1625RFM Glass Break detector or equivalent. The installer shall follow manufacturer's instructions when installing, testing and programming system equipment.

66. Holdup Device, Bill Trap, V-Plex: Include Bill Trap Devices inside of money drawers in the checkout stand. The Bill trap devices be the Honeywell Model 264 or equivalent.

67. Holdup Device: Bill Trap, Wireless: Include Bill Trap Devices inside of money drawers in the checkout stand. The Bill trap devices be the Honeywell Model 264 or equivalent.

68. Holdup Device, Foot Rail, V-Plex: Include Foot Rail Devices on the floor below the customer service station or below designated desks within the protected location. The Foot Rail devices be the Honeywell Model 266 or equivalent.

69. Holdup Device, Foot Rail, Wireless: Include Foot Rail Devices on the floor below the customer service station or below designated desks within the protected location. The Foot Rail devices be the Honeywell Model 266 or equivalent.

70. Wireless Panic Button: Include Wireless Panic Button at designated locations. The when the Panic Button is triggered into alarm, the wireless transmitter shall send a message to the control panel. Each wireless Panic Button shall send periodic check-in signals to its associated control panel. The Panic Button's associated control panel

shall report any missing Panic Button within four and one-half hours. Each Panic Button shall report any low battery condition a minimum of seven days before its battery becomes too discharged to power the transmitter. The Panic Button's associated control panel shall report any low battery condition by providing a local indication at system keypads, and shall send a trouble report to the central monitoring station. The wireless Panic Button shall include a cover tamper switch and a rear tamper switch so that it shall send a tamper alarm in the event that the Panic Button's cover is removed, or if the Panic Button is removed from its mounting surface. The model number of the wireless Panic Button is the 5802MN2 2-button panic transmitter or equivalent.

71. Siren, Outdoor, High Output in Enclosure: Monitor the status of protected openings and areas in the armed and disarmed state. When an audible alarm occurs, the system shall sound a Honeywell Model 702 Siren or equivalent inside of the Model 743BE Enclosure. The installer shall install the siren as directed by manufacturer instructions.

72. Siren Enclosure, Outdoor, Large: For large sirens, the system shall be mounted inside of the Model 743BE Enclosure. The installer shall install the siren as directed by manufacturer instructions.

73. Siren Indoor/Outdoor in Enclosure: Monitor the status of protected openings and areas in the armed and disarmed state. When an audible alarm occurs, the system shall sound a Honeywell Model 719 Siren or equivalent located inside a 742BE Enclosure. The installer shall install the siren as directed by manufacturer instructions.

74. Siren Enclosure Indoor/Outdoor: 719 Sirens shall be enclosed in a 742BE Enclosure. The installer shall install the siren as directed by manufacturer instructions.

75. Siren Indoor/Outdoor: Monitor the status of protected openings and areas in the armed and disarmed state. When an audible alarm occurs, the system shall sound a Honeywell Model 748LC Siren or equivalent. The installer shall install the siren as directed by manufacturer instructions.

76. Siren Indoor, Wireless: Monitor the status of protected openings and areas in the armed and disarmed state. When an audible alarm occurs, the system shall sound a Honeywell Model 5800WAVE Wireless Siren or equivalent. The installer shall install the siren as directed by manufacturer instructions.

77. Siren Indoor: Monitor the status of protected openings and areas in the armed and disarmed state. When an audible alarm occurs, the system shall sound a Honeywell

Model Wave2 Siren or equivalent. The installer shall install the siren as directed by manufacturer instructions.

78. Siren Indoor, Flush Mount: Monitor the status of protected openings and areas in the armed and disarmed state. When an audible alarm occurs, the system shall sound a Honeywell Model Wave2F Siren or equivalent. The installer shall install the siren as directed by manufacturer instructions.

79. Strobe, Indoor/Outdoor: Monitor the status of protected openings and areas in the armed and disarmed state. When an alarm occurs, the system shall indicate the alarm with a Honeywell Model 710 Strobe or equivalent. The installer shall install the strobe as directed by manufacturer instructions.

80. Leak, Flood, Water Level, Wireless: Monitor the level of water in a designated location. The installer shall install a Honeywell Model 5821 Water Sensor with a 470PB remote probe or equivalent. The owner may monitor air conditioning duct drip pans, areas beneath water heaters and tanks, refrigeration drain basins, sump pumps, basements, or restrooms. The installer shall follow manufacturer instructions while installing and programming system equipment.

81. Temperature Threshold Detector, Wireless: Selected areas in the facility will use Temperature Threshold detectors to sense high or low level temperatures within a designated area. Locations for Temperature Threshold detectors may be in kitchens, laboratories, server rooms, classrooms or other areas where temperature threshold notification is critical. For each Temperature Threshold detector, install a Honeywell 5821 wireless temperature alarm transmitter and a Honeywell TS280R Temperature probe or equivalent.

82. Carbon Monoxide Detector, Wireless: Selected areas in the facility will use carbon monoxide detectors to sense high levels of carbon monoxide. Locations for carbon monoxide detectors may be in parking garages, kitchens, laboratories, near fireplaces, or in natural gas fueled heater closets. For each carbon monoxide detector, install a System Sensor CO1224 Carbon Monoxide detector or equivalent, and an appropriate power supply.

83. Holdup Device: Two-button, Conventional: Include Two-button Holdup Devices at customer windows. The holdup devices shall be the Honeywell Model 268 two-button holdup button or equivalent.

84. Mini-Dome Color Camera, Standard Resolution, Indoor Day Use: Include surveillance capabilities, and shall use the Honeywell HD40 Mini-Dome Camera or equivalent. The installer shall follow manufacturer’s installation instructions when installing system equipment.

85. Mini-Dome Color Camera, High Resolution, Indoor/Outdoor Day Use: Include surveillance capabilities, and shall use the Honeywell HD50 Mini-Dome Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

86. Mini-Dome Color Camera, High Resolution, Indoor/Outdoor Day Use: Include surveillance capabilities, and shall use the Honeywell HD51 Mini-Dome Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

87. Mini-Dome Camera, Standard Resolution, Indoor Day/Night Use: Include video surveillance capabilities, and shall use the Honeywell HD60 Mini-Dome Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

88. Mini-Dome Camera, Standard Resolution, Indoor Day/Night Use: Include video surveillance capabilities, and shall use the Honeywell HD61 Mini-Dome Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

89. Mini-Dome Camera, High Resolution, Indoor/Outdoor, Day/Night Use: Include video surveillance capabilities, and shall use the Honeywell HD70 Mini-Dome Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

90. Mini-Dome Camera, High Resolution, Indoor/Outdoor, Day/Night Use: Include video surveillance capabilities, and shall use the Honeywell HD73 Mini-Dome Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

91. Bullet-Style Camera, Standard Resolution, Indoor/Outdoor, Day/Night Use with night vision: Include video surveillance capabilities, and shall use the Honeywell HB70 Bullet-style Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

92. Bullet-Style Camera, High Resolution, Indoor/Outdoor, Day/Night Use with Long-range night vision: Include video surveillance capabilities, and shall use the Honeywell HB71 Bullet-style Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

93. Bullet-Style Camera, High Resolution, Indoor/Outdoor, Day/Night Use: Include video surveillance capabilities, and shall use the Honeywell HB72 Bullet-style Camera or

equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

94. Bullet-Style Camera, High Resolution, Indoor/Outdoor, Day/Night Use: Include video surveillance capabilities, and shall use the Honeywell HB73 Bullet-style Camera or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

95. Asset Protection, Wireless: Selected indoor assets within the protected site will use wireless indoor asset protection devices to sense protected object Asset Protection. Where designated in the plans, install a Honeywell Model 5870API Wireless Asset Detector or equivalent.

96. Outdoor Passive Infrared Motion Detector, Wall, Post, or Pole-mounted, Wireless: Selected outdoor areas in the protected site will use outdoor motion detectors to sense motion. Where designated in the plans, install a Honeywell Model 5800PIR-OD Wireless Motion Detector or equivalent.

97. Premium Keypad, Alpha Display: The system keypad shall include a two-line, reverse display alphanumeric LCD display. Use the Honeywell Vista 6460 keypad or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

98. Portrait-style Keypad, Alpha Display: The system keypad shall include a two-line, reverse display alphanumeric LCD display. Use the Honeywell Vista 6165EX Portrait-style keypad or equivalent. The installer shall follow manufacturer's installation instructions when installing system equipment.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine site conditions prior to installation. Notify Architect and Owner in writing if unsuitable conditions are encountered. Do not start installation until site conditions are acceptable.

3.2 INSTALLATION

A. Intrusion detection and fire alarm control panel system shall be installed and tested in accordance with manufacturer's installation instructions.

1. Coordinate interfaces with Owner's representative where appropriate.

2. Provide backboxes, pullboxes, connectors, supports, conduit, cable, and wire for a complete and reliable installation. Obtain Owner's approval for exact location of all boxes, conduit, and wiring runs prior to installation.

3. Install conduit, cable, and wire parallel and square with building lines, including raised floors areas. Do not exceed forty percent fill in conduits. Gather wires and tie to create an orderly installation.

4. Coordinate with other trades to provide proper sequencing of installation.

3.3 FIELD COMMISSIONING AND CERTIFICATION

A. Field Commissioning: Test system as recommended by manufacturer, including the following:

1. Conduct complete inspection and testing of equipment, including verification of operation with connected equipment.

2. Test devices and demonstrate operational features for Owner's representative and authorities having jurisdiction as applicable.

3. Correct deficiencies until satisfactory results are obtained.

4. Submit written copies of test results.

3.4 TRAINING

A. Conduct on-site system training, with the number of sessions and length of sessions as recommended by the manufacturer. Training shall include administration, provisioning, configuration, operation and diagnostics.

END OF SECTION.

.